



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,385	01/16/2002	Brian John Cragun	ROC920010255US1	6187
7590	01/25/2007	Grant A. Johnson IBM Corporation, Dept. 917 3605 Highway 52 North Rochester, MN 55901-7829	EXAMINER KANG, ROBERT N	ART UNIT 2625 PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/25/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/050,385	CRAGUN ET AL.	
Examiner Robert N. Kang		Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 01 November 2006.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,2,4-9,11-15 and 17-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,2,4-9,11-15 and 17-20 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 16 January 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Response to Arguments

1. Applicant's arguments filed 11/01/06 have been fully considered but they are not persuasive.
2. In regards to the applicant's claim that the invention is "in some way cognizant of the plurality of copies," the applicant must state how the apparatus/system/method is "cognizant" or aware of the number of copies for consideration- the examiner finds no correlation (see footnote 2) of "printing the first image only if the first image contains at least one handwritten notation, and printing the second image only if the second image contains at least one handwritten notation," of claim 1 and 20 and any cognizance of a number of copies. Amendments to claims 13 and 19 could be marginally considered as taking into account a previous version of a document, but this does not, in the examiner's mind, comprise any "cognizance" of a "number of copies."
3. Regarding Applicant's request to provide an exact publication date for the reference, the Examiner has provided the only documentation available to the Examiner, a screen capture showing the copyright date of Word 2000 as 1999, predating the applicant's filing date by at least 1 year. If the applicant requires an exact date, Examiner suggests calling Microsoft customer service.
4. The applicant has amended the claims to merely repeat a process. The claims as originally presented and rejected by the various combinations cited by the Examiner compare two images, a first scanned image 1 and a second scanned image 2. The

amended claims merely repeat this process by re-scanning another image, wherein the second scanned image takes the place of the first scanned image, and the newly scanned third image takes the place of the second scanned image. For example, 1 is compared to 2, then 2 is compared to 3. This in no way affects the patentability or novelty of the invention, as running a routine in a loop is not a new, novel, or inventive concept. All rejections are now made in view of a program loop.

Drawings

5. The drawings are objected to because the label at the top of FIG. 2F should be "F". FIG. 2E should be corrected, as there is an infinite loop from 277->272->277. The line should go from 277 to 271. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are

not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The MPEP states in Chapter 2100 Section IV: "Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and Office personnel should treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as nonstatutory functional descriptive material." Examiner suggests the standard claim language, "a computer readable medium, comprising..."

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. The claims disclose "capturing a first image of a page selected from a first copy in the plurality of copies" and then "capturing a second image of *the page* selected from a second copy in the plurality of copies." It is unclear whether this is the identical page as the page captured in the first image.

2. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The scanner captures a plurality of "pages" and the processor determines whether "*the captured page contains*" notations. It is unclear which of the plurality of pages is being operated upon.

3. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The scanner captures "a digital image of a page" from "*multiple copies of a document*." It is unclear how a single image is captured from several copies.

4. Claims 1 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: steps 262-278. An entire document is scanned and registered as a first draft before any second copies are scanned and compared.

5. Claim 8 recites the limitation "first paper document" and "second paper document" in lines 2 and 3. There is insufficient antecedent basis for this limitation in

the claim, as claim 1 discloses only a first copy and a second copy from a "plurality of copies of a paper document."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435).

In regards to claim 1, Graf discloses a method which scans and compresses a check or other document after isolating the dynamic elements from the preprinted check. Graf states in column 3, lines 65-68, "the term 'document' as used herein therefore includes not only paper documents such as forms, financial instruments, and the like, but more generally any type of information which may be stored or processed in the form of an electronic image." Regarding the first step of the method, "capturing a first image of a first paper document," Graf discloses in column 5, lines 4-8, "the check 10 may be scanned, utilized a scanner 35, in a matter well known in the art, to produce an original full check image 40 which includes the static and dynamic portions identified above." Graf defines the dynamic portion of the document in column 4, line 9, stating, "a dynamic portion, such as added handwritten text, is a portion which may be distinct

from document to document." Thus the dynamic portion qualifies as a handwritten notation. Finally, Graf discloses in column 5, lines 54-55, "the handwritten dynamic portion of the original check image 40 is identified and then isolated from the preprinted static portion." Thus Graf's patented method meets the requirements for the second step of the pending method, "detecting whether the first image contains a handwritten notation."

Graf does not expressly disclose "printing the first image only if the first image contains at least one handwritten notation."

Bloomberg discloses in claim 21 a copy machine which utilizes morphological processes to identify either handwritten annotations or machine text in a mixed format document (lines 1-10). Bloomberg's invention then "create[s] a mask image ... covering only either said region of handwritten annotation or said region of printed text," and "printing characters substantially covered by said mask image." Therefore, in the case wherein the mask image covers only the region of handwritten annotations, when there is no handwriting detected, no mask region is generated, and as such, no printing occurs. Therefore, Bloomberg teaches "printing only if the first image contains at least one handwritten notation."

Therefore, it would have been obvious at the time of invention to one of normal skill in the art to include in Graf a decision to only print if there is actually handwriting to be printed as taught by Bloomberg.

The motivation of this modification would be to only print checks or documents wherein handwriting is detected, so as to not print blank checks and/or unmarked documents.

Thus it would have been obvious to combine Graf with Bloomberg to obtain the invention as disclosed in claim 1.

Graf does not expressly disclose performing the operation *twice*, as the newly amended claims require. However, the examiner believes it is inherent in Graf that the invention is meant to be used more than once. Thus, using Graf/Bloomberg twice would yield the “capturing a second image of the page selected from a second copy in the plurality of copies,” since the page would be another handwritten check, or “a second copy in the plurality of copies.” Likewise, handwriting would be detected and the check printed only if handwriting is detected.

Regarding claim 13, broadly defining a document as the unmarked check, the individual written checks comprise “a plurality of drafts.” Therefore, *any* handwritten notations on the check comprise “new handwritten notations.” Thus claim 13 is met by Graf/Bloomberg as well.

In regards to claim 20, a “computer program configured to perform” the method as disclosed in claim 1, because the method is anticipated by Graf/Bloomberg, the software containing said method would also be unpatentable over Graf/Bloomberg.

Regarding claims 12 and 14, "wherein detecting whether the first image contains handwritten notations comprises detecting color differences in the image," Graf discloses in figures 4 and 5 a method of extracting the handwritten portions by various image transforms to determine a color spectrum range of the handwritten text, as shown in step 500. By filtering out image components outside the color spectrum range in step 502, the handwritten ink can be detected and extracted. Graf further states in column 9, lines 7-11, "since the name and address are typically printed with the same ink, their color will show up in the histogram as a prominent peak. The image data can then be thresholded to make only this color visible and thereby extract the printed text." Since extracting the handwritten text occurs simultaneously with an accurate detection of the text, and the extraction is based upon color differences in the first image, the method of claim 12 is unpatentable over the Graf/Bloomberg combination.

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), further in view of Mooney (US-PAT 6,980,331).

Graf/Bloomberg meets the requirements of claim 1, upon which claim 2 depends. Graf does not explicitly disclose "detecting whether the first image contains handwritten notations comprises using optical character recognition to detect typewritten characters."

Mooney discloses in column 4, lines 47-53, a fax machine wherein "preferably, the recipient's fax number and the sender's identifying information are typed using a

common font, e.g., courier. However, using a suitable optical character recognizer, embedded handwritten characters and numbers can be detected, recognized, and converted to textual information in accordance with the principles of the present invention." Furthermore, the applicant indicates that this method of handwriting detection was well-known in the industry at the time of invention.

Therefore, it would have been obvious at the time of invention to one of normal skill in the art to modify Graf/Bloomberg to utilize OCR to detect handwriting as taught by Mooney.

The motivation of this modification would be to utilize an alternative method of handwriting recognition.

Thus it would have been obvious to combine Graf/Bloomberg and Mooney to obtain the invention as disclosed in claim 2.

3. Claims 4, 5, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), further in view of Mooney (US-PAT 6,980,331), further in view of Microsoft Corporation Word version 9 (otherwise known as Word 2000).

With regards to claims 4, 5, and 6, the Graf/Bloomberg/Mooney combination does not expressly "generate location information for the handwritten notation" as disclosed by claim 4, consequently it does not "print the location information" as disclosed by claim 5, and finally the invention does not "store the location information in memory," as disclosed by claim 6.

Microsoft Corporation's word processing application, Word 2000, also known as Word version 9, was released in 1999. A brief summary of the history and features of the Microsoft Word application can be found at www.wikipedia.org. As shown in reference V, Microsoft discloses a method of tracking changes to a document by "using revision marks, the equivalent of 'redlining' or 'blacklining' in the legal profession, to indicate tracked changes," as disclosed in paragraph 2. These red and black lines, broadly defined, qualify as "location information" because they mark the specific location in a document where changes have occurred. Printing the document while under the change tracking mode also prints these red and black lines on the print media, thus "printing the location information." Furthermore, these red and black lines may be saved with the current version of the document to compare changes to a previous version, thus qualifying as "storing the location information in a memory."

Graf/Bloomberg, Mooney, and Microsoft Word are combinable because they all deal directly with image and document processing as well as indirectly with image and document printing.

Therefore it would have been obvious at the time of invention to one of normal skill in the art to include in Graf/Bloomberg/Mooney a system of tracking document changes as taught by Microsoft Word, using the aforementioned detected handwritten notations as changes.

The motivation behind this modification would be to allow easy and automatic location and indexing of detected handwritten notations; this method would allow the

modification of image files whereas the MS-Word system is only compatible with proprietary DOC or text files.

Therefore it would have been obvious to combine Graf/Bloomberg/Mooney with Microsoft Word to obtain the invention as disclosed in claims 4, 5, and 6.

Regarding claim 7, Paragraph 2 of reference V shows a "blackline" in the margin of a paragraph of text where changes have been detected. It is denoted by the label "changed line." Microsoft Word, when in change tracking mode, automatically places these blacklines in the margins of paragraphs of changed text; an operation parallel with 'blacklining' in the legal industry. Therefore, this comprises "superimposing a margin mark onto the first image adjacent to the handwritten notation." Thus, the aforementioned Graf/Bloomberg/Mooney/Microsoft combination meets the requirements of claims 7 and 15.

Regarding claim 17, Paragraph 3 of the Microsoft Help document V states "when a comment is added word numbers it and records it in a separate comment pane... word tracks each reviewer's comment reference marks in a distinct color." Broadly defined, the numbering and coloring of each comment qualifies as "a notation summary" which is generated by the word processing application, which in turn uses the central processor of the host PC. Therefore, Graf/Bloomberg/Word meets the limitations of claim 17.

4. Claims 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), further in view of Gonzales (reference U).

Graf/Bloomberg meets the limitations of claim 1, upon which claim 11 depends.

Graf/Bloomberg does not expressly disclose a method of determining whether a document has handwritten notations by receiving two copies of the same original document after handwritten notations have or have not been added by comparing the two images.

Gonzales on page 465, paragraph 4, states "one of the simplest approaches for detecting changes between two image frames $f(x, y, T_i)$ and $f(x, y, T_j)$ taken at times T_i and T_j , respectively, is to compare the two images pixel by pixel. One procedure for doing this is to form a difference image. A difference image between two images taken at times T_i and T_j may be defined as

$$d_{ij}(x, y) = 1 \quad \text{if } |f(x, y, T_j) - f(x, y, T_i)| > \text{Threshold}$$

$$d_{ij}(x, y) = 0 \quad \text{otherwise}$$

Graf/Bloomberg and Gonzales are combinable because they are both from the field of image processing and image transforms. Furthermore, the techniques cited in Gonzales are extremely elementary relative to the processes as disclosed by Graf/Bloomberg. The applicant believes this to be only limited to "motion detection," which, the examiner points out, is identical to detecting a difference in two images (i.e., watching something move indicates that you see *differences* in each subsequent frame).

Therefore, it would have been obvious at the time of invention to one of ordinary skill in the art to integrate in Graf/Bloomberg a method of receiving a second image and comparing it to the first through subtraction to determine any changes in the images as taught by Gonzales. Claim 11 is inherently met by this modification for the following reasons: 1.) In order to have a second image for comparison, another copy of the document with or without additional markings must be received. Since Graf discloses a scanning operation to capture the first image, it follows that Graf would utilize the same scanning operation when scanning a separate physical sheet of paper and 2.) To compare an image pixel by pixel as taught by Gonzales, image data must be retained in order to perform the necessary subtraction. For image data to be maintained, the intensity values for each pixel must be stored in either a location in physical memory or within registers within a processor cache. In either case, this comprises “storing the first [or second] copy of the first image in a storage device.” Thus the entire process in claim 11 is unpatentable over the Graf/Bloomberg/Gonzales combination.

The motivation for this modification would be to reduce the possibility of incorrectly designating an image or non-OCR readable document object present in both sheets as handwritten notations.

Thus it would have been obvious at the time of invention to combine Graf/Bloomberg with Gonzales to achieve the invention disclosed in claim 11.

Regarding claim 18, because the all the checks are only one page, broadly defining the blank check as a “first draft” and the handwritten checks as “second drafts,”

the Graf/Bloomberg/Gonzales invention “compares an image of a page from a first draft with the same page from a second draft.”

Regarding claim 8, the “paper document” is the blank check. Therefore, the second paper document (in fact, ALL scanned checks) comprise “a copy of the first paper document with additional handwritten notations.”

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), further in view of Gonzales (reference U).

The Graf/Bloomberg/Gonzales invention meets the limitations of claim 8, upon which claim 9 depends.

None of the references expressly disclose “detecting additional handwritten notations” via “comparing the first image to the second image”, as the images are copies of the document with different handwriting.

However, duplicate check detection was well known at the time of invention (official notice). While generally checks are assigned unique numbers, it is possible to detect duplicate or counterfeit checks through comparing the images of two checks.

Therefore, it would have been obvious at the time of invention to one of normal skill in the art to include in Graf/Bloomberg a method of duplicate check detection via the differencing algorithm disclosed by Gonzales.

The motivation of this modification would be to detect the presence of a duplicate check.

Thus it would have been obvious at the time of invention to modify the Graf/Bloomberg/Gonzales combination to obtain the invention as disclosed in claim 9.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), further in view of Microsoft Corporation Word version 9 (otherwise known as Word 2000).

Examiner asserts that claim 19 is simply a homologation of previous method and/or apparatus claims. Specifically, limitations (a) and (b) are simply a restatement of claim 10, as is the limitation after (c), "wherein the programmable processor is programmed to detect handwritten comments." Furthermore, the limitation, to "generate notation summary for the page based on the detection," is a restatement of claim 17. Similarly, the following claim "superimpose a margin mark adjacent to the handwritten comments," is a restatement of claim 15. The final limitation, "print[ing] the image of the page only if the page includes at least one handwritten comment," is a simple restatement of claim 13.

The examiner contends that the only difference between the collection of apparatus claims [15, 17] and claim 19 are the following limitations: 1.) The apparatus is "a photocopier" and 2.) Said photocopier comprises (c), a printer coupled to the programmable processor.

With regards to these examiner-labeled limitations, Graf in figure 1 discloses a scanner 35, coupled to an image processor 37, finally coupled to a printer 38. This functionally comprises "a photocopier," even though the technology used may have slight variations from the common photocopy machine. Thus limitation 1 is met. Furthermore, the printer 38 is coupled to the image processor 37 in figure 1 as well. Therefore limitation 2, "a printer coupled to the programmable processor," is also met.

Finally, the limitation added in the applicant's amendment, "determine if the handwritten comment is new" is unpatentable over the combination. Examiner defines the document to be the original check with no handwriting; each handwritten check comprises a "draft." Therefore, all handwritten comments are "new handwritten comments." Ergo, detecting handwriting as taught by Graf comprises "determining if the handwritten comment is new."

Further explanation of this rejection can be found by referencing the individual rejections for claims 15, and 17, wherein the combinations of prior art and the motivations for such combinations has been exhaustively described.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

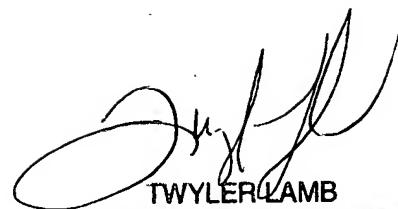
TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert N. Kang whose telephone number is 571-272-0593. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler M. Lamb can be reached on (571)272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RNK



TYWLER LAMB
SUPERVISORY PATENT EXAMINER